REMARKS

By this response, Claims 80 and 92 have been canceled, and Claims 72-75, 79, 81-83, 85 and 89 have been amended, leaving Claims 75-79, 81-91 and 93 pending in the application. Reconsideration and allowance are respectfully requested in light of the following remarks.

Rejection Under 35 U.S.C. § 102

Claims 72 -75 stand rejected under 35 U.S.C. § 102(a) over 6,200,412 to Kilgore et al. ("Kilgore") for the reasons stated on pages 2-4 of the Official Action. The rejection is respectfully traversed.

Claim 72 has been amended to recite the features of "a planar electrically-conductive coil which inductively couples RF energy into the plasma processing chamber and energizes the process gas into a plasma state," as recited in canceled Claim 80. As Claim 80 is not included in this ground of rejection, Claim 72 is patentable over Kilgore. Claims 73 and 74, which depend from Claim 72, are also patentable.

Independent Claim 75, as amended, recites an inductively coupled plasma CVD processing system comprising, *inter alia*, the features of "a planar dielectric window forming a top wall of the plasma processing chamber" and "a substantially planar electrically-conductive coil which inductively couples RF energy into the plasma processing chamber and energizes the process gas into a plasma state" (emphasis added). Support for the claimed "planar dielectric window" is found at page 11, line 19, of the specification. Kilgore fails to disclose or suggest the subject matter of Claim 75 for the following reasons.

Claim 75 recites a "**planar** dielectric window" and a "substantially **planar** electrically-conductive coil" (emphasis added). Kilgore does not disclose or suggest these features. As stated in Phillips v. AWH Corp., No. 03-1269, -1286, slip op. at 9 (Fed. Cir. July 12, 2005) (en banc):

> We have frequently stated that the words of a claim 'are generally given their ordinary and customary meaning.' ... We have made clear, moreover, that the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application. (Citations omitted).

See also M.P.E.P. § 2111.01(II). As stated in Toro Co. v. White Consol. Indust. Inc., 53 USPQ2d 1065, 1067 (Fed. Cir. 1999), "[w]ords in patent claims are given their ordinary meaning in the usage of the field of the invention, unless the text of the patent makes clear that a word is used with a special meaning." See also M.P.E.P. § 2111.01(III). Applicants have not given the term "planar" a special meaning in the specification. As such, the term "planar" should properly be given its ordinary meaning.

As evidence of the ordinary meaning of the term "planar," Applicants have attached a copy of page 1045 of The American Heritage College *dic·tion·ar·y* (2000). As shown, the recited term "planar" has the meaning of "**1.** of, relating to, or situated in a plane." This dictionary definition of "planar" is consistent with the meaning of this term as it is used in the present specification and claims, and also with the exemplary embodiments of the claimed subject matter shown in the drawings.

Particularly, the exemplary embodiment of the CVD processing system shown in FIG. 4 of the present application includes a planar dielectric window 155 and an antenna 150 in the form of a planar coil, where the dielectric window 155 and

antenna 150 are situated in respective horizontal planes. See page 11, lines 19-20, describing the coil 150 shown in FIG. 4 as a "planar multiturn coil" and the dielectric window 155 as a "planar dielectric window." In light of the specification and drawings, Applicants submit that the term "planar" should be given its ordinary meaning of "being situated in a plane. "

Kilgore fails to suggest a CVD processing system including "a **planar** dielectric window forming a top wall of the plasma processing chamber" and "a **substantially planar** electrically-conductive coil which inductively couples RF energy into the plasma processing chamber and energizes the process gas into a plasma state" (emphasis added), as recited in Claim 75. As shown in FIG. 1 of Kilgore, the chemical vapor deposition (CVD) system includes a **hemispherically-shaped** vessel or bell jar 112 of aluminum oxide, and an induction coil 102 following the hemispherical contour of the vessel 112 (column 3, lines 23-37), i.e., the coil 102 is also **hemispherically-shaped**.

The Official Action asserts that Kilgore teaches "a substantially planar electrically-conductive coil (102a; Figure 1)." However, Kilgore's induction coil 102 is clearly not "substantially planar" as the term "planar" should be properly construed. Rather, the induction coil 102 is hemispherically-shaped and, as such, is **not** situated in a plane. In addition, Kilgore's hemispherically-shaped vessel 112 is different from "a **planar** dielectric window forming a top wall of the plasma processing chamber," (emphasis added), as recited in Claim 75. Accordingly, the CVD processing system recited in Claim 75 is also patentable over Kilgore.

Therefore, withdrawal of the rejection is respectfully requested.

First Rejection Under 35 U.S.C. § 103

Claims 76-83 stand rejected under 35 U.S.C. § 103(a) over Kilgore in view of U.S. Patent No. 5,169,509 to Latz et al. ("Latz") for the reasons stated on pages 4-7 of the Official Action. Claim 80 has been canceled. The rejection is respectfully traversed.

Claims 76-79 and 81-83 depend directly or ultimately from independent Claim 72. Claim 72 recites an inductively coupled plasma CVD processing system comprising, *inter alia*, the features of "a planar dielectric window forming a top wall of the plasma processing chamber" and "a substantially planar electrically-conductive coil which inductively couples RF energy into the plasma processing chamber and energizes the process gas into a plasma state" (emphasis added). As discussed above, Kilgore fails to suggest at least these features.

Latz fails to cure the deficiencies of Kilgore with respect to the inductively coupled plasma CVD processing system recited in Claim 72. Latz discloses an apparatus for coating a substrate by sputtering. As shown in FIG. 1 of Latz, the apparatus comprises a magnetron cathode 5 including magnets 19, 19a and 19b disposed between a cathode base 11 and magnet yoke 11b, and a magnetron cathode 5a including magnets 19c, 19d and 19e disposed between a cathode base 11a and magnet yoke 11c. The magnetron cathodes 5 and 5a are electrically connected to a power supply 10. Magnetic fields are formed across the targets 3, 3a, which condense the plasma in front of the targets. Ions in the plasma are accelerated by electric fields generated by alternating voltage supplied by the power supply 10. See column 1, lines 25-47, of Latz. Latz does not suggest the features of "a **planar** dielectric window forming a top wall of the plasma processing chamber"

and "a **substantially planar** electrically-conductive coil which inductively couples RF energy into the plasma processing chamber and energizes the process gas into a plasma state" (emphasis added), as recited in Claim 72. Accordingly, even if the teachings of Kilgore and Latz were combined, their combined teachings still would not include each and every feature recited in Claim 72. As stated at M.P.E.P. § 2143.03:

> To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

Thus, the combination of Kilgore and Latz fails to support any alleged *prima facie* case of obviousness with respect to Claims 76-79 and 81-83 for at least the same reasons as those stated regarding Claim 72.

Moreover, Claims 79 and 81-83 recite additional combinations of features that further patentably distinguish the claimed subject matter over the applied combination of references. For example, Claim 79 recites the features of "each of the injector tubes includes an exit orifice, and each of the exit orifices is spaced the same distance outwardly from the periphery of the substrate when the substrate is supported on the substrate support" (emphasis added). Kilgore's CVD system includes process gas injection tubes 128, 128a, 128b for injecting process gas into the chamber. See FIG. 1 of Kilgore. The Official Action contends that all of the injector tubes 128, 128a, 128b are spaced outwardly from the periphery of the substrate. Applicants respectfully disagree. Kilgore discloses that the "openings of the tubes 128 are positioned somewhat above the level of the wafer when it is in position for processing" (column 4, lines 11-13. FIG. 1 shows the exit openings (i.e., the inner ends) of the tubes overlying the wafer. Kilgore does **not** disclose that the

exit openings of the tubes 128 are spaced outwardly from the periphery of the wafer 108 shown in Figure 1. Accordingly, Kilgore does not suggest the combination of features of Claim 79.

Latz's apparatus shown in FIG. 1 includes a shielding plate 4 having a gap 6 through which process gas from a distributing line 24 is flowed into the coating chamber 15. Latz's sputtering apparatus does not suggest modifying Kilgore's CVD system to result in the CVD processing system recited in Claim 79.

As another example, Claim 83 recites that "all of the injector tubes include an exit orifice spaced outwardly from a periphery of the substrate support" (emphasis added). The combination of Kilgore and Latz also fails to suggest the subject matter recited in Claim 83 for reasons stated above.

Therefore, withdrawal of the rejection is respectfully requested.

Second Rejection Under 35 U.S.C. § 103

Claims 84-87 and 89-93 stand rejected under 35 U.S.C. § 103(a) over Kilgore in view of U.S. Patent No. 5,691,876 to Chen et al. ("Chen") for the reasons stated on pages 7-11 of the Official Action. Claim 92 has been canceled. The rejection is respectfully traversed.

Chen has been cited in the Official Action as allegedly disclosing the features of Claim 84, which depends from Claim 72. Applicants submit that Chen fails to suggest modifying Kilgore's system to result in the inductively coupled plasma CVD processing system recited in Claim 72, comprising, *inter alia*, the features of "a planar dielectric window forming a top wall of the plasma processing chamber" and "a substantially planar electrically-conductive coil which inductively couples RF

energy into the plasma processing chamber and energizes the process gas into a plasma state" (emphasis added). Accordingly, Claim 84 is patentable over the combination of Kilgore and Chen.

Independent Claim 85, as amended, recites an inductively coupled plasma CVD processing system comprising, inter alia, the features of "a planar dielectric window forming a top wall of the plasma processing chamber" and "a substantially planar electrically-conductive coil which inductively couples RF energy into the plasma processing chamber and energizes the process gas into a plasma state" (emphasis added). The combination of Kilgore and Chen also fails to suggest the subject matter recited in Claim 85.

Claims 86, 87, 89-91 and 93 depend from Claim 85 and thus are also patentable over the combination of Kilgore and Chen for at least the same reasons as those for which Claim 85 is patentable. Moreover, these dependent claims recite additional combinations of features that further patentably distinguish the claimed system over the applied references. For example, Claim 89 recites the features of "the injector tubes are oriented in the plasma processing chamber to direct the process gas along axes thereof that intersect the exposed surface of the substrate at an acute angle when the substrate is supported on the substrate support" (emphasis added). As shown in FIG. 5, an exemplary injector tube 180A includes an axis B intersecting the exposed upper surface of the substrate (wafer 120A) at an acute angle. See also FIG. 4 showing a wafer 120 supported on a substrate support 130 and injector tubes 180 each including an axis intersecting the exposed upper surface of the substrate 120 at an acute angle. In contrast, Kilgore's process gas injection

tubes 128, 128a, 128b includes axes that extend upwardly away from the wafer 108, such that the axes do not intersect the wafer 108.

Therefore, withdrawal of the rejection is respectfully requested.

Third Rejection Under 35 U.S.C. § 103

Claim 88 stands rejected under 35 U.S.C. § 103(a) over Kilgore in view of Chen and Latz for the reasons stated on pages 11 and 12 of the Official Action. The rejection is respectfully traversed.

For reasons discussed above, the combination of Kilgore, Chen and Latz fails to suggest the system recited in Claim 85, comprising, *inter alia*, the features of "a planar dielectric window forming a top wall of the plasma processing chamber" and "a substantially planar electrically-conductive coil which inductively couples RF energy into the plasma processing chamber and energizes the process gas into a plasma state" (emphasis added). Thus, Claim 88, which depends from Claim 85, is patentable over the applied combination of references for at least the same reasons as those for which Claim 85 is patentable.

Therefore, withdrawal of the rejection is respectfully requested.

Conclusion

For the foregoing reasons, allowance of the application is respectfully requested. Should the Examiner have any questions regarding this response, Applicants' undersigned representative can be reached at the telephone number given below.

Respectfully submitted,

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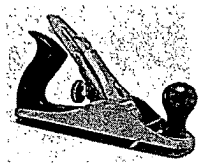
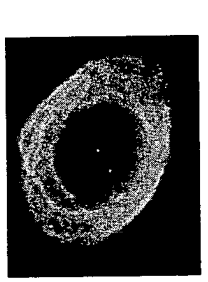
nother). — *intr.* To plagiarize the ideas or work
- **pla′gia•riz′er** *n.*
ā′jə-rē) *n., pl.* **-ries. 1.** Plagiarism. **2.** Archaic.
giarizes. [Lat. *plagiārius*, kidnapper, plagiarist < *plaga*, net. See **plāk-**[1]*.]
Slanting; inclining: *plagiotropism.* [Gk. < *plagios*, oblique
plagos, side. See **plāk-**[1]*.]
:e (plā′jē-ə-klās′, -klāz′, plāj′ē-) *n.* Any of a
k-forming series of triclinic feldspars, consisting
of sodium and calcium aluminum silicates. [Gk.
gio- + Gk. *klasis*, breaking (< *klan*, to break).]
•**pism** (plā′jē-ŏz′əm) *n.* Bot. The tendency
at an oblique or horizontal angle, as roots or
· **pla′gi•o•tro′pic** (-ə-trō′pĭk, -trŏp′ĭk) *adj.*
n. **1.** A widespread affliction or calamity, esp. one
ne retribution. **2.** A sudden destructive influx or
ıtbreak: *a plague of accidents.* **3.** A cause of
nuisance. **4.** A highly infectious, usu. fatal epi
ıse, esp. bubonic plague. — *tr.v.* **plagued, plagu-**
s. 1. To pester or annoy persistently or incessantly;
harass. 2. To afflict with or as if with a disease or
ME *plage*, blow, calamity, plague < LLat. *plāga*,
, wound. See **plāk-**[2]*.] — **plagu′er** *n.*
› **pla•guey** (plā′gē) *adj.* Vexatious; bothersome.
, **pla′gui•ly** *adv.*
n., pl. **plaice** or **plaic•es. 1.** A large edible marine
leuronectes platessa) of western European waters,
various flatfishes, such as *Hippoglossoides plates-*
North American Atlantic waters, related to the
E < OFr. *plais* < VLat. **platix*, alteration of Lat.
ɔrob. ult. < Gk. *platus*, broad. See **plat-**[2]*.]
n. **1.** A rectangular woolen scarf of a tartan pattern
er the left shoulder by Scottish Highlanders.
h with a tartan or checked pattern. **b.** A pattern of
. [Sc.Gael. *plaide.*] — **plaid** *adj.*
plād′ĭd) *adj.* **1.** Made of plaid or having a plaid
2. Wearing a plaid.
.) *adj.* **plain•er, plain•est. 1.** Free from obstruction;
ear. **2.** Obvious to the mind; evident. See Syns at
ıt. **3.** Not elaborate or complicated; simple;
htforward; frank or candid. **5.** Not mixed with other
:es; pure. **6.** Common in rank or station; average.
·. **7.** Not pretentious; unaffected. **8.** Marked by few
rnamentation or decoration. **9.** Not dyed, twilled, or
:d. **10.** Lacking beauty or distinction. **11.** Sheer; utter.
fied. **12.** *Archaic.* Having no visible elevation or
ı; flat; level. — *n.* **1.a.** An extensive, level, usu. treeless
land. **b.** A broad level expanse, as a part of the
: a lunar mare. **2.** Something free of ornamentation
ous matter. — *adv. Informal.* Clearly; simply: plain
rn. [ME < OFr. < Lat. *plānus*. See **pelə-**[2]*.]
— **plain′ness** *n.*
ant (plān′chănt′) *n. Rom. Cath. Ch.* See **plainsong**.
ain-chant (transl. of Med.Lat. *cantus plānus*)
see PLAIN + *chant*, song; see CHANT.]
othes man or **plain•clothes•man** (plān′klōz′
ɛ′-) *n.* A member of a police force, esp. a detective, who
civilian clothes on duty.
ield (plān′fēld′). A city of NE NJ SW of Newark; as
ı 1684. Pop. 46,567.
ine (plān′jān′) *adj.* Lacking adornment or pretension;
or simple.
ild (plān′līd′) *adj.* Made of three strands laid together
a right-hand twist. Used of a rope.
eople (plān) *pl.n.* Members of the Mennonites, Amish,
ınkers, noted for their plain dress and simple style of life.
ailing *n. Informal.* Easy progress over a smooth
t course.
Indian (plānz) *n.* A member of any of the Native American
peoples inhabiting the Great Plains.
•man (plānz′mən) *n.* An inhabitant or a settler of the
ıs, esp. of the prairie regions of the United States.
song (plān′sông′, -sŏng′) *n. Rom. Cath. Ch.* **1.a.** A
gorian chant. **b.** A melody to which contrapuntal music is
added in Gregorian chant. **2.** Any medieval liturgical chant
without strict meter and sung without accompaniment.
ınsl. of Med.Lat. *cantus plānus*.]
•spo•ken (plān′spō′kən) *adj.* Frank; straightforward;
nt. — **plain′spo′ken•ness** *n.*
t (plānt) *n.* **1.** A complaint. **2.** A lamentation. [ME <
inte < Lat. *plānctus*, lament < p.part. of *plangere*, to
's breast, lament. See **plāk-**[2]*.]
text or **plain•text** (plān′tĕkst′) *n.* The original form
nessage as opposed to the encrypted form.
•tiff (plān′tĭf) *n. Law.* The party that institutes a
court. [ME *plaintif* < AN *pleintif* < OFr. *plaintif*
ieved. See PLAINTIVE.]
n•tive (plān′tĭv) *adj.* Expressing sorrow; mournful or
ıcholy. [ME *plaintif* < OFr., lamenting < *plaint*, complaint
:e PLAINT.] — **plain′tive•ly** *adv.* — **plain′tive•ness** *n.*
n•view (plān′vyōō′). A city of NW TX S of Amarillo.
1,700.

Plain•ville (plān′vĭl′). A town of central CT SW of Hartford.
Pop. 17,392.
plain weave *n.* A weave in which the filling threads and the
warp threads interlace alternately, forming a checkerboard
pattern.
plain-wo•ven (plān′wō′vən) *adj.* Made in plain weave.
plait (plāt, plăt) *n.* **1.** A braid, esp. of hair. **2.** A pleat. — *tr.v.*
plait•ed, plait•ing, plaits. 1. To braid. **2.** To pleat. **3.** To
make by braiding. [ME *pleit*, fold, braid, poss. < *pleiten*, to
fold, braid, alteration (influenced by OFr. *pleit*, fold) of OFr.
plier, *pleiir* < Lat. *plicāre*, to fold. See **plek-**[2]*.] — **plait′er** *n.*
plan (plăn) *n.* **1.** A scheme, program, or method worked out
beforehand to accomplish an objective. **2.** A tentative project
or course of action. **3.** A systematic arrangement of parts; an
outline or a sketch. **4.** A drawing or diagram made to scale
showing the structure or arrangement of something. **5.** In per-
spective rendering, one of several imaginary planes perpen-
dicular to the line of vision between the viewer and the object
being depicted. — *v.* **planned, plan•ning, plans.** — *tr.* **1.** To
form a scheme or program for the accomplishment or attain-
ment of. **2.** To have as a specific aim or purpose; intend.
3. To draw or make a graphic representation of. — *intr.* To
make plans. [Fr., alteration of *plant*, ground plan, map <
planter, to plant < Lat. *plantāre* < *planta*, sole of the foot.
See **plat-**[2]*.] — **plan′ner** *n.*
Syns: plan, blueprint, design, project, scheme, strategy.
The central meaning shared by these nouns is "a method or
program in accordance with which something is to be done or
accomplished": *has no plans; a blueprint for reorganization;
social conventions of human design; an urban-renewal proj-
ect; a scheme for conservation; a strategy for survival.*
plan- *pref.* Var. of **plano-**.
plan•ar (plā′nər, -när′) *adj.* **1.** Of, relating to, or situated in a
plane. **2.** Flat: *a planar surface.* **3.** Having a two-dimensional
quality. [LLat. *plānāris*, flat < Lat. *plānus*. See PLAIN.] — **pla•
nar′i•ty** (plā-năr′ĭ-tē) *n.*
pla•nar•i•an (plə-nâr′ē-ən) *n.* Any of various small, chiefly
freshwater turbellarian flatworms of the order Tricladida,
having soft broad ciliated bodies. [< NLat. *Plānāria*, genus
name < fem. of LLat. *plānārius*, on level ground < *plānus*,
flat. See **pelə-**[2]*.]
pla•na•tion (plā-nā′shən) *n.* The process of erosion and dep-
osition in which a level surface is produced, as by streams or
wind. [Lat. *plānum*, flat surface; see PLANE[1] + -ATION.]
planch•et (plăn′chĭt) *n.* **1.** A flat disk of metal ready for
stamping as a coin; a coin blank. **2.** A small shallow metal
container in which a radioactive substance is deposited for
measurement of its activity. [Dim. of *planch*, flat plate, slab <
ME *plaunche*, plank < OFr. *planche* < LLat. *planca* < fem.
of Lat. *plancus*, flat. See **plāk-**[1]*.]
plan•chette (plăn-shĕt′) *n.* A small triangular board support-
ed by two casters and a vertical pencil that, when lightly
touched by the fingertips, is said to spell out subconscious or
supernatural messages. [Fr. < OFr., dim. of *planche*, board.
See PLANCHET.]
Planck (plängk), **Max Karl Ernst Ludwig.** 1858–1947. German
physicist who won a 1918 Nobel Prize.
Planck's constant (plängks) *n. Symbol* **h** The constant of pro-
portionality relating the energy of a photon to its frequency,
equal to approx. 6.626×10^{-34} joule-second. [After Max
Karl Ernst Ludwig PLANCK.]
plane[1] (plān) *n.* **1.** *Math.* A surface containing all the straight
lines that connect any two points on it. **2.** A flat or level
surface. **3.** A level of development, existence, or achievement.
4. An airplane or a hydroplane. **5.** A supporting surface of an
airplane; an airfoil or a wing. — *adj.* **1.** *Math.* Of or being a
figure lying in a plane: *a plane curve.* **2.** Flat; level. [Lat.
plānum, flat surface < neut. of *plānus*, flat. See **pelə-**[2]*. N.,
sense 4, short for AEROPLANE.] — **plane′ness** *n.*
plane[2] (plān) *n.* **1.** A carpenter's tool with an adjustable blade
for smoothing and leveling wood. **2.** A trowel-shaped tool for
smoothing the surface of clay, sand, or plaster in a mold. — *v.*
planed, plan•ing, planes. — *tr.* **1.** To smooth or finish with
a plane as if with a plane. **2.** To remove with a plane. — *intr.*
To work with a plane. **2.** To act as a plane. [ME < OFr.
**plaine* (LLat. *plāna* < *plānāre*, to plane < *plānus*, flat. See
pelə-[2]*.]
plane[3] (plān) *intr.v.* **planed, plan•ing, planes. 1.** To rise partly
out of the water, as a boat does at high speeds. **2.** To soar or
glide. **3.** To travel by airplane. [ME *planen*, to glide, soar <
OFr. *planer* < *plain*, flat, level < Lat. *plānus*. See **pelə-**[2]*.]
plane[4] (plān) *n.* The plane tree. [ME < OFr. < Lat. *platanus* <
Gk. *platanos*, perh. < *platus*, broad. See **plat-**[2]*.]
plane angle *n. Math.* An angle formed by two straight lines in
the same plane.
plane geometry *n. Math.* The geometry of planar figures.
plane•load (plān′lōd′) *n.* The load an airplane can carry.
plan•er (plā′nər) *n.* **1.** One that planes, esp. a machine tool
that is used to smooth or finish the surfaces of wood or metal.
2. *Print.* A smooth block of wood used to level a form of type.
planer tree (plā′nər) *n.* A small, deciduous elmlike swamp
tree (*Planera aquatica*) of the southern United States, having
small ribbed nutlike fruit. [After Johann Jacob *Planer* (1743–
89), German botanist.]
plane•side (plān′sīd′) *n.* The area adjacent to an airplane.
plan•et (plăn′ĭt) *n.* **1.** A nonluminous celestial body larger
than an asteroid or a comet that revolves around a star, such
as the sun. **2.** One of the seven celestial bodies, Mercury,
Venus, the moon, the sun, Mars, Jupiter, and Saturn, thought
by ancient astronomers to revolve in the heavens about a fixed
Earth and among fixed stars. **3.** One of the seven revolving
astrological celestial bodies that in conjunction with the stars
are believed to influence human affairs. [ME < OFr. *planete*
< LLat. *planēta* < Gk. *planētēs*, var. of *planēs*, *planēt-* <
planasthai, to wander. See **pelə-**[2]*.]
plane table *n.* A portable surveying instrument consisting es-
sentially of a drawing board and a ruler mounted on a tripod
and used to sight and map topographic details.
plan•e•tar•i•um (plăn′ĭ-târ′ē-əm) *n., pl.* **-i•ums** or **-i•a** (-ē-
ə). **1.** An apparatus or a model representing the solar system.
2.a. An optical device for projecting images of celestial bodies
and other astronomical phenomena onto the inner surface of
a hemispherical dome. **b.** A building or room containing a
planetarium, with seats for an audience.
plan•e•tar•y (plăn′ĭ-tĕr′ē) *adj.* **1.** Of, relating to, or resem-
bling the physical or orbital characteristics of a planet or the
planets. **2.a.** Of or relating to the earth; terrestrial or earthly.
b. Of or affecting the entire world; global. **3.** Wandering;
erratic. **4.** Being or relating to a gear train having a central
gear with an internal ring gear and one or more pinions.
planetary nebula *n.* A nebula consisting of a hot blue-white
central star surrounded by an envelope of expanding gas.
plan•e•tes•i•mal (plăn′ĭ-tĕs′ə-məl) *n.* Any of innumerable
small bodies thought to have orbited the sun and aggregated
into the planets. [PLANET + (INFINIT)ESIMAL.]
plan•e•toid (plăn′ĭ-toid′) *n. Astron.* See **asteroid 1.** — **plan′-
e•toi′dal** (-toid′l) *adj.*
plan•e•tol•o•gy (plăn′ĭ-tŏl′ə-jē) *n.* The branch of astronomy
that deals with the planets, satellites, and meteors of the solar
system. — **plan′e•to•log′i•cal** (plăn′ĭ-tl-ŏj′ĭ-kəl) *adj.*
— **plan′e•tol′o•gist** *n.*
plane tree *n.* Any of several trees of the genus *Platanus*, having
ball-shaped fruit clusters and usu. outer bark that flakes off in
patches.
planet wheel *n.* A small gear wheel in an epicyclic train.
plan•gent (plăn′jənt) *adj.* **1.** Loud and resounding: *plangent
bells.* **2.** Expressing or suggesting sadness; plaintive. [Lat.
plangēns, *plangent-*, pr.part. of *plangere*, to strike, lament. See
plāk-[2]*.] — **plan′gen•cy** *n.* — **plan′gent•ly** *adv.*
pla•nim•e•ter (plə-nĭm′ĭ-tər, plā-) *n.* An instrument that
measures the area of a plane figure as a mechanically coupled
pointer traverses the perimeter of the figure. — **pla′ni•met′-
ric** (plā′nə-mĕt′rĭk), **pla′ni•met′ri•cal** (-rĭ-kəl) *adj.* — **pla′-
ni•met′ri•cal•ly** *adv.* — **pla•nim′e•try** *n.*
plan•ish (plăn′ĭsh) *tr.v.* **-ished, -ish•ing, -ish•es.** To smooth
(metal) by rolling or hammering. [ME **planishen* < OFr. *pla-
nir*, *planiss-*, to make smooth < *plan*, level < Lat. *plānus*. See
pelə-[2]*.] — **plan′ish•er** *n.*
pla•ni•sphere (plā′nĭ-sfîr′) *n.* **1.** A representation of a sphere
or part of a sphere on a plane surface. **2.** *Astron.* A polar
projection of half or more of the celestial sphere on a chart
with an adjustable overlay to show the stars visible at a given
time and place. — **pla′ni•spher′ic** (-sfîr′ĭk, -sfĕr′-), **pla′ni•
spher′i•cal** (-ĭ-kəl) *adj.*
plank (plăngk) *n.* **1.a.** A piece of lumber cut thicker than a
board. **b.** Planking. **2.** A foundation; a support. **3.** One of the
articles of a political platform. — *tr.v.* **planked, plank•ing,
planks. 1.** To furnish or cover with planks. **2.** To bake or broil
and serve (fish or meat) on a plank. **3.** To put or set down,
often emphatically or with force. [ME < ONFr. *planke* <
LLat. *planca* < *plancus*, flat. See **plāk-**[1]*.]
plank•ing (plăng′kĭng) *n.* **1.** Planks considered as a group;
plank. **2.** An object or a structure made of planks.
plank•ter (plăngk′tər) *n.* One of the minute organisms that
collectively constitute plankton. [Gk. *planktēr*, wanderer <
planktos, wandering. See PLANKTON.]
plank•ton (plăngk′tən) *n.* The collection of small or micro-
scopic organisms, including algae, that float or drift in great
numbers in fresh or salt water, esp. at or near the surface, and
serve as food for larger organisms. [Ger. < Gk., neut. of
planktos, wandering < *plazein*, to turn aside. See **plāk-**[2]*.]
— **plank•ton′ic** (-tŏn′ĭk) *adj.*
Planned Parenthood (plănd). A service mark used for an or-
ganization that provides family planning services.
Pla•no (plā′nō). A city of NE TX, a suburb of Dallas. Pop.
128,713.
plano- or **plani-** or **plan-** *pref.* Flat: *planoconvex.* [< Lat.
plānus, flat. See **pelə-**[2]*.]
plan•o•blast (plăn′ə-blăst′) *n.* The medusa of certain hydro-
zoans. [Gk. *planos*, wandering (< *planasthai*, to wander; see
PLANET) + -BLAST.]
pla•no•con•cave (plā′nō-kŏn-kāv′, -kŏn′kāv′) *adj.* Flat on
one side and concave on the other: *a planoconcave lens.*
pla•no•con•vex (plā′nō-kŏn-vĕks′, -kŏn′vĕks′) *adj.* Flat on


plane[2]
Bench plane


planetary nebula

ă pat	oi boy
ā pay	ou out
âr care	o͝o took
ä father	o͞o boot
ĕ pet	ŭ cut
ē be	ûr urge
ĭ pit	th thin
ī pie	*th* this
îr pier	hw which
ŏ pot	zh vision
ō toe	ə about, item
ô paw	

Stress marks:
′ (primary);
′ (secondary), as in dictionary (dĭk′shə-nĕr′ē)